

# Pinnacle Natural Area Preserve

## 435 acres – Russell County, Virginia

**The Site:** Bordering Big Cedar Creek – a state scenic river – for two miles to its confluence with the Clinch River, Pinnacle Natural Area Preserve is characterized by fascinating geological formations and a diverse array of rare plants, animals and natural communities. Russell County gave the original tract to the Virginia Department of Conservation and Recreation (DCR) in 1992. The Nature Conservancy (TNC) facilitated this gift through the Partners in Conservation project. Additional tracts were acquired with assistance from TNC, with Virginia citizens' contributions to the Open Space Conservation and Recreation Fund, and with funds from the Virginia Parks and Natural Areas Bond.

**Natural History:** Pinnacle Natural Area Preserve resides in Virginia's Clinch River watershed, which contains the highest number of globally imperiled and vulnerable freshwater species in the United States. The waters in and around the preserve support a rich diversity of aquatic life. Sound management of the preserve and the lands throughout the watershed are critical to help maintain the water quality essential for the region's aquatic species.

Named for a towering rock outcrop known locally as The Pinnacle, this preserve has an assortment of geological features derived from the underlying bedrock, which was deposited a half billion years ago. At that time the area was beneath a calm, shallow sea. Calcium-rich remains of corals, algae and other marine organisms accumulated on the sea floor, and periodic storms would wash in sandy material. These calcareous and sandy sediments gradually were compressed and hardened into layers of limestone and sandstone. Much of the limestone was chemically transformed into a harder material, called dolomite, by the infusion of magnesium. The collision of ancient continents heaved these rock layers into jagged mountains where they have been exposed to the forces of weathering and erosion for more than 350 million years.

The different rates at which limestone, dolomite and sandstone erode have given rise to the many interesting geological features of the area. The Pinnacle, for example, is a sheer spire of dolomite nearly 400 feet tall that was created by the dissolving action of groundwater in combination with down cutting of the gorge by Big Cedar Creek. Big Falls, a dramatic waterfall in Big Cedar Creek, is formed where the creek passes over several layers of erosion-resistant sandstone, turned on edge by the mountain building process. There are many caves in the region. They were formed when acidic groundwater dissolved the limestone and dolomite bedrock. Evidence of this cavern formation can be seen in the preserve as sinkholes, which resulted when underground cavities collapsed near the surface.

The geological diversity here has led to biological diversity and created conditions suitable for several rare species. Growing in cracks and ledges along steep limestone cliffs are two globally rare plant species, Canby's mountain-lover (*Paxistima canbyi*) and Carolina saxifrage (*Saxifraga caroliniana*), and one state rarity, American harebell (*Campanula rotundifolia*). Another rare plant species, glade spurge (*Euphorbia purpurea*), is found

along some creek banks within the preserve. The Big Cedar Creek millipede (*Brachoria falcifera*), which lives around rock ledges, is only known to exist here and in a few other sites nearby.

**Resource Management:** Scientists continue to study the preserve's flora, fauna and geological formations to develop plans to best manage and protect them. DCR staff members work with local landowners to help protect the area's caves and waterways from nonpoint source pollution.

**Public Access:** A small parking area, a suspension footbridge over Big Cedar Creek and hiking trails are currently available. Additional work is planned for 1999.

**Compatible Uses:** The preserve is especially suited for hiking, nature study and photography. Fishing in Big Cedar Creek is also a popular activity. Some uses are prohibited including horseback riding, mountain biking, rock climbing, off-road vehicles, and collecting plants, animals and minerals. Visitors are urged to help keep the preserve free of litter and to stay on designated trails for safety – there are numerous steep precipices – and to protect fragile plant communities.

**Location:** The preserve is in southwestern Virginia, about 25 miles north of Bristol. From I-81 at Abingdon, take ALT 58 west through town to U.S. Route 19 north. Go about 20 miles to Business 19 into Lebanon. At the second light, turn left on Route 82 west. Go 1.1 mile to Route 640 (Glade Hollow Road) and turn right. Go 4.2 miles and turn left on Route 721 (a gravel road). Go 0.8 mile to the parking area on the left.

### Natural Heritage Resources

#### Plants

hairy rockcress (*Arabis hirsuta*) G5/S1S2  
American harebell (*Campanula rotundifolia*) G5/S1  
beaked dodder (*Cuscuta rostrata*) G4/S2  
glade spurge (*Euphorbia purpurea*) G3/S2  
Canby's mountain-lover (*Paxistima canbyi*) G2/S2  
Carolina saxifrage (*Saxifraga caroliniana*) G2/S2?  
Prostrate blue violet (*Viola walteri*) G4G5/S2

#### Animals

Big Cedar Creek millipede (*Brachoria falcifera*) G1/S1  
hellbender (*Cryptobranchus alleganiensis*) G4/S2S3

#### Communities

rich cove/mesic slope forest  
dry calcareous forest/woodland

### For more information please contact:

Virginia Department of Conservation and Recreation  
Natural Heritage Program  
Southwest Region Steward (540) 676-5673  
or  
217 Governor Street, Third Floor  
Richmond, VA 23219 (804) 786-7951  
website: <http://www.dcr.virginia.gov/dnh/>



Department of Conservation & Recreation  
CONSERVING VIRGINIA'S NATURAL & RECREATIONAL RESOURCES

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